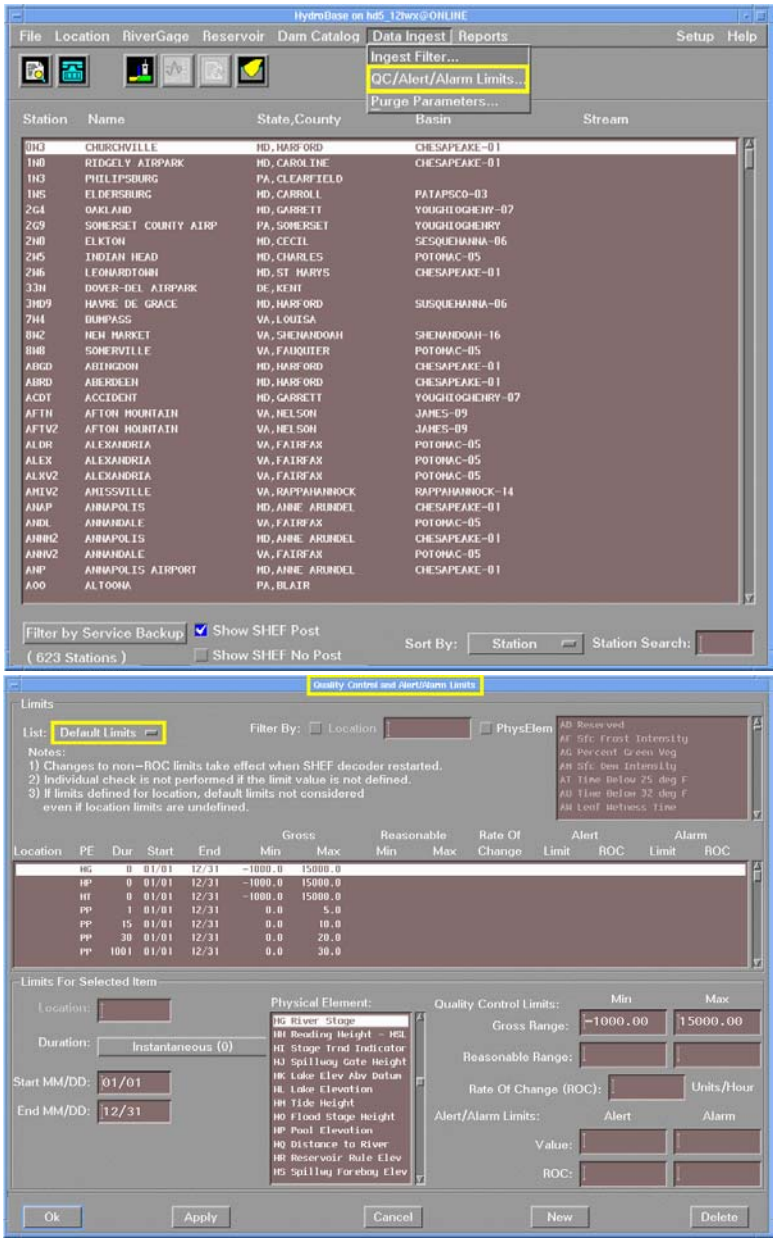
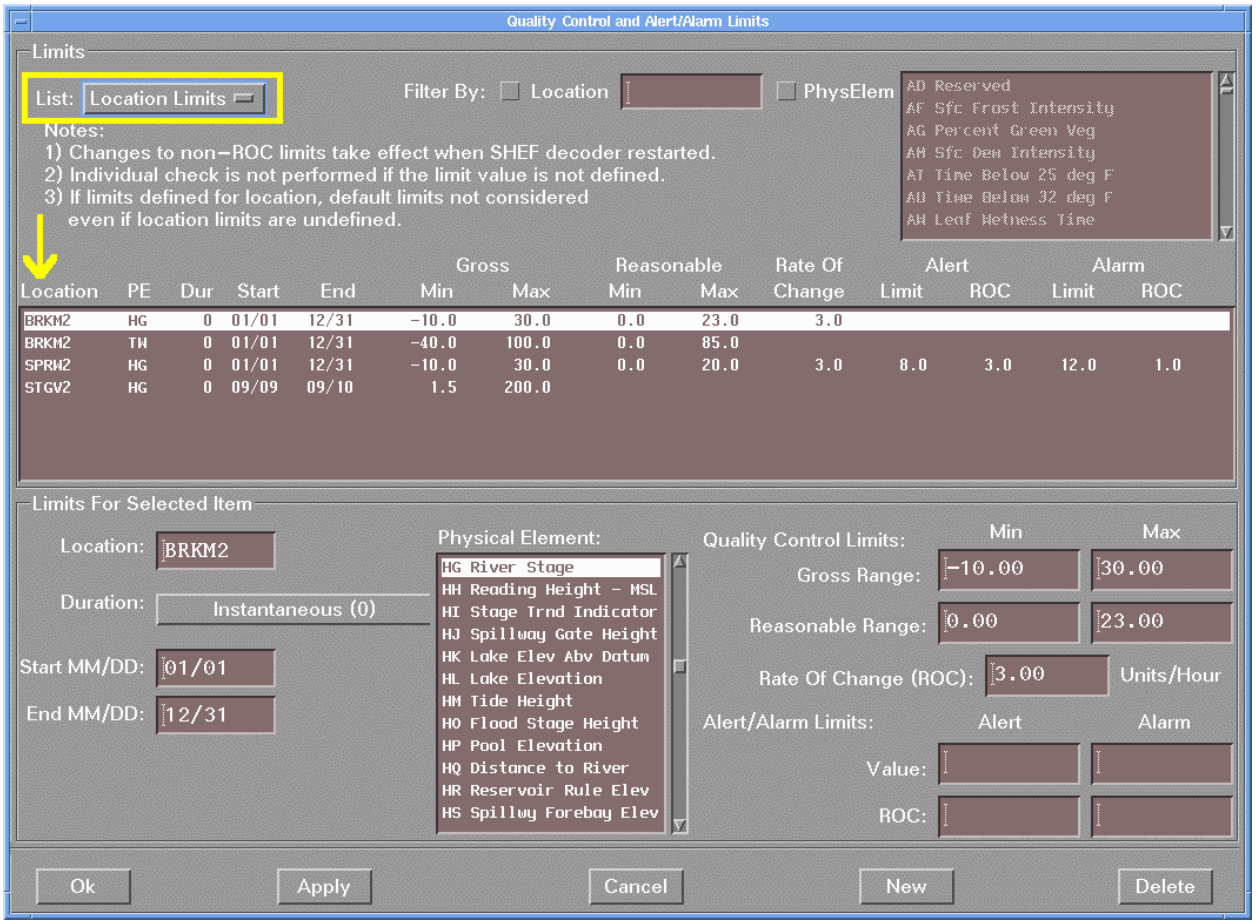
Quality Control and Alert/Alarm Limits (version 5.1.2)

The Quality Control and Alert/Alarm Limits window can be used to view and edit quality control and alert/alarm parameters for data flowing into HydroBase. The user can access this display from the **Root Window** in HydroBase by clicking on the **DataIngest** pull down menu. Click on **QC/Alert/Alarm Limits**. The display will automatically be in default mode. The defaults will display Physical Elements and their limits in the table.

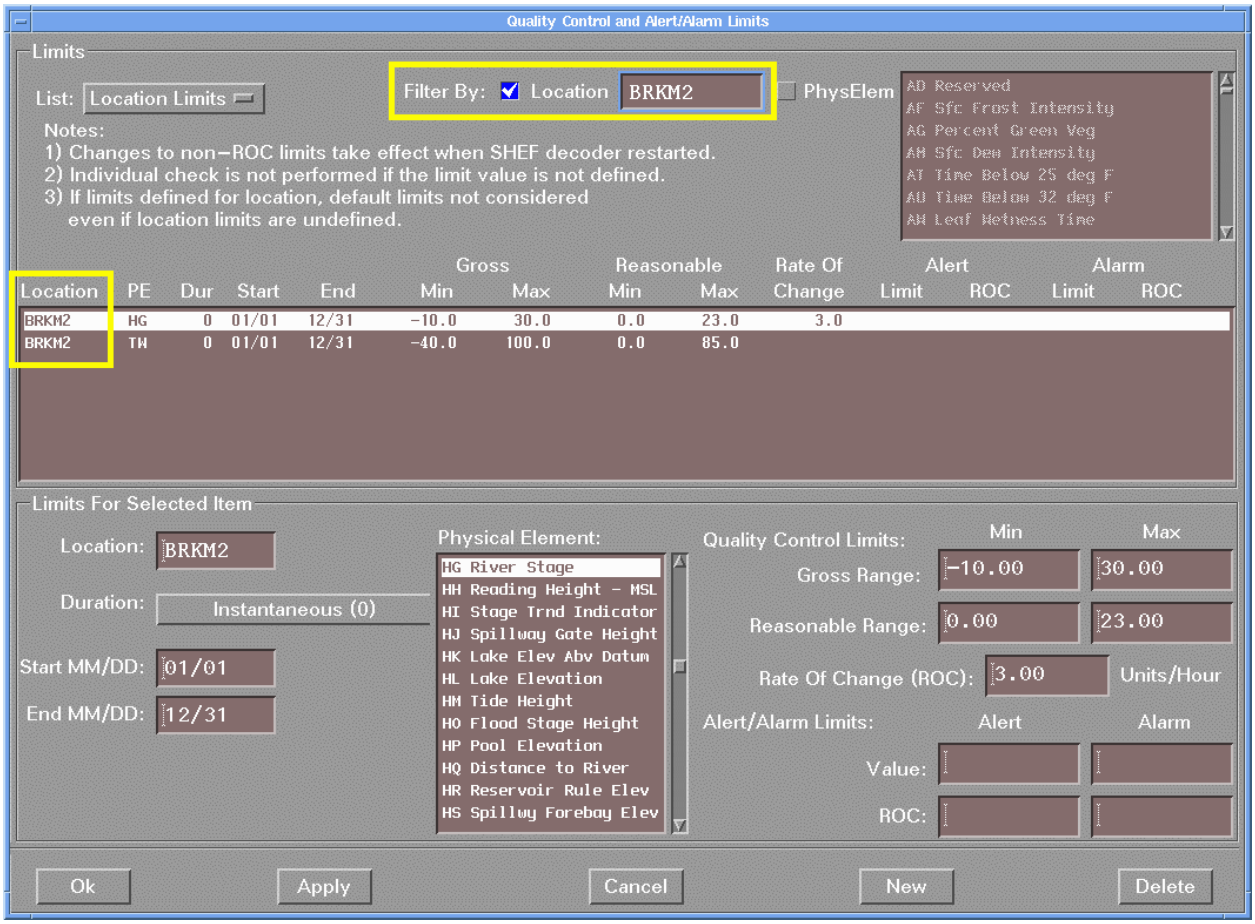


Important Note: ANY CHANGES TO QUALITY CONTROL AND/OR ALERT/ALARM LIMITS REQUIRE THE SHEFDECODER TO BE STOPPED AND RESTARTED.

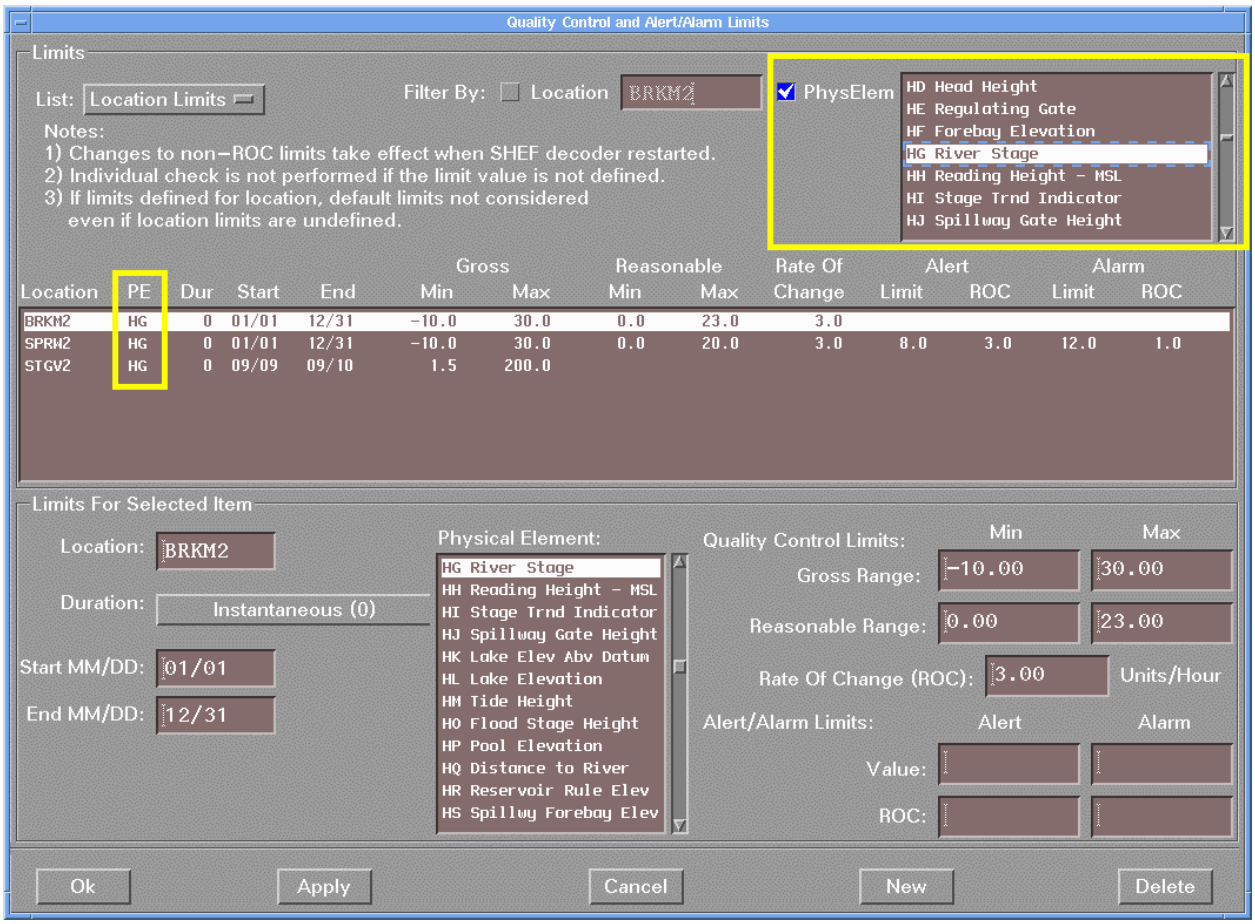
The user can change the defaults to locations at the **List:** option. Choosing *Location Limits,* will allow the user to view locations that have quality control and/or alert/alarm parameters set up. The information is displayed in a table in the middle of the window. Later we will discuss the table in more details. It is important to have *Location Limits* option on so the user can view/edit/create location-specific limits within this window.



The **Filter By:** option filters the display list by location or physical element. This can help the user narrow the search. The user can checkmark *Location* and type in a specific location id to show the limits for that location in the table.

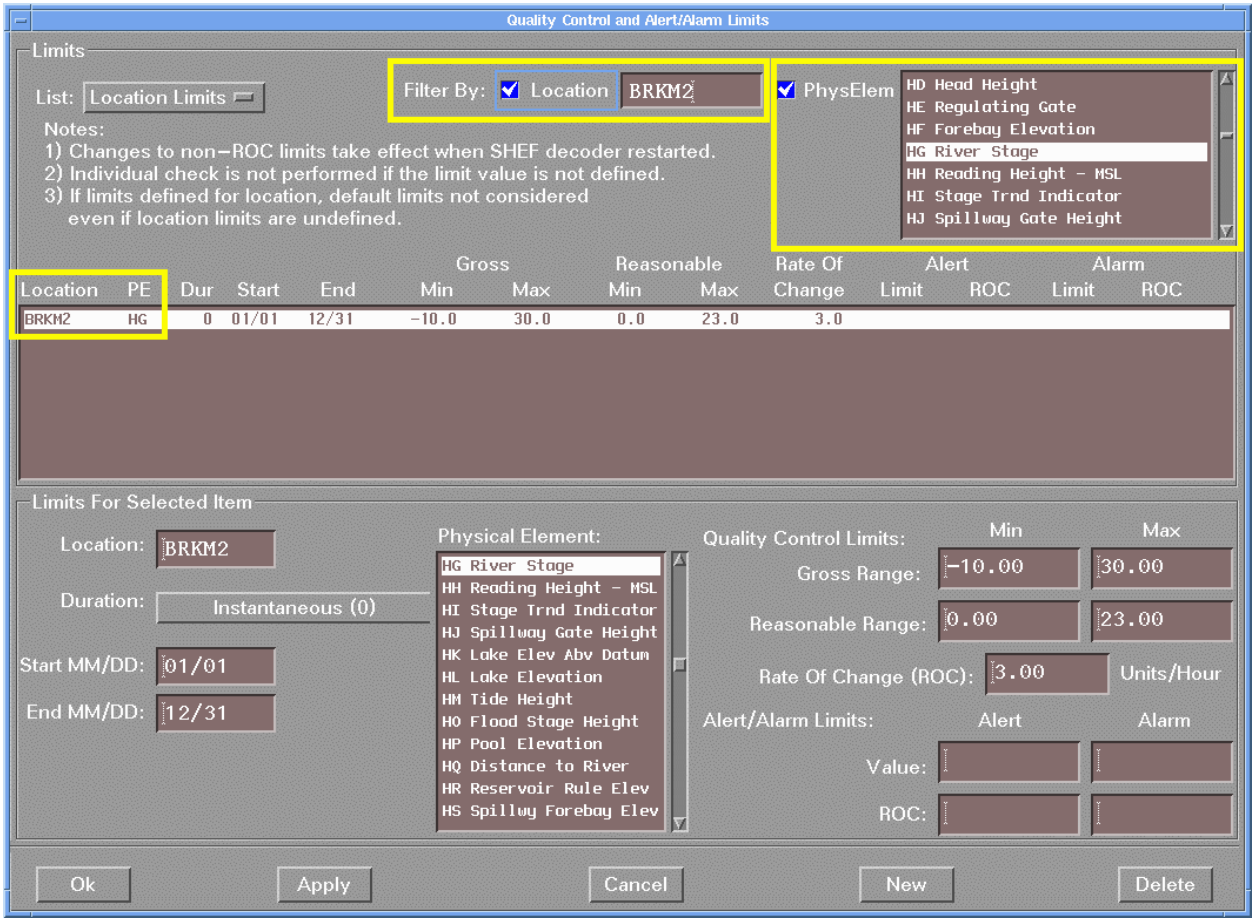


Another way to filter the search is to checkmark *PhysElem* to display the physical elements. The user can scroll down and highlight a physical element to display. The table will display all locations for that particular physical element as long as *Location* is unchecked.



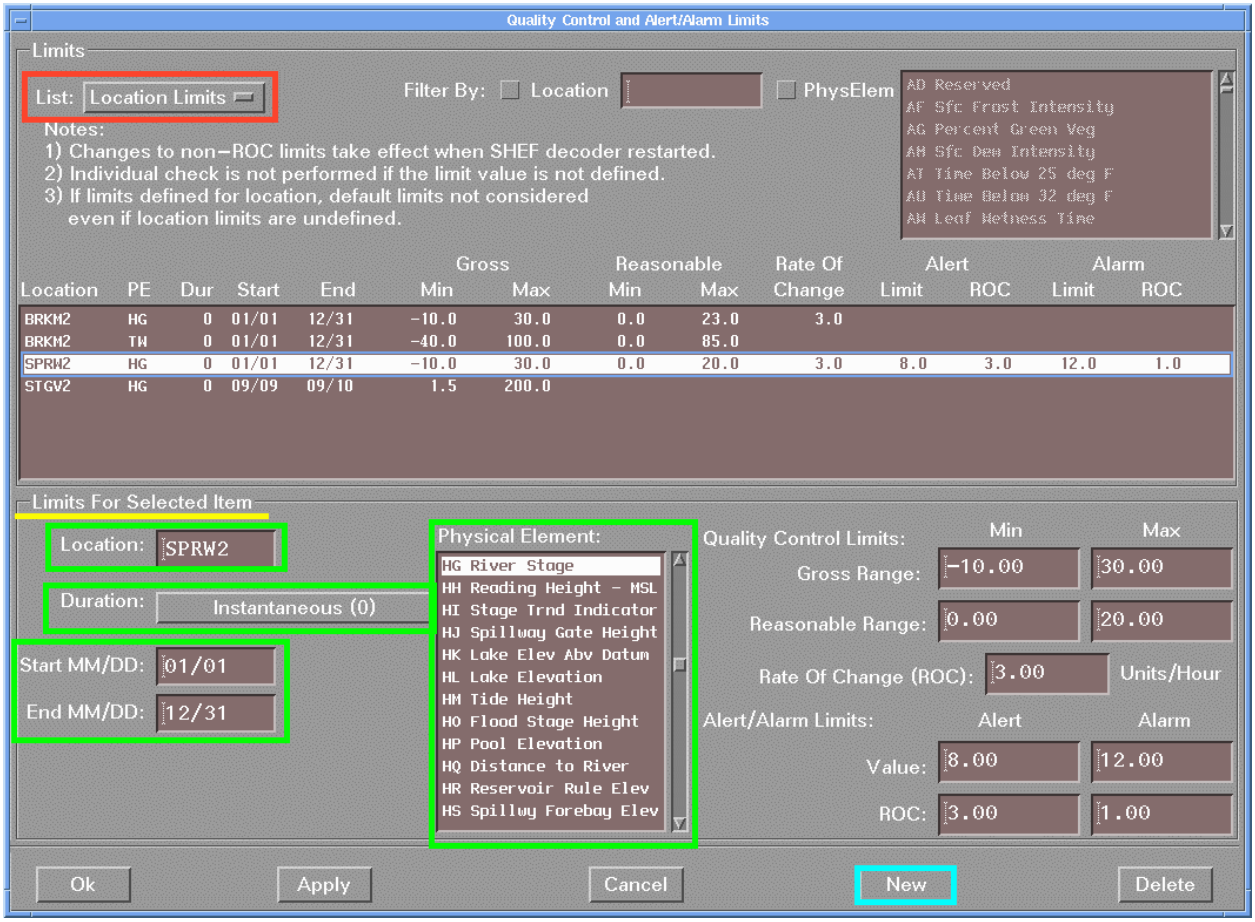
If the user checkmarks both *Location* and *PhysElem* this will display the limits with that particular physical element, for that particular location. This really narrows the search.

The header of the table displays the following information:
Location - location id
PE - physical element
Dur - duration code
Start - start date (mm/dd)
End - end date (mm/dd)
Gross Min and Max - minimum and maximum values for gross range check
Reasonable Min and Max - minimum and maximum values for reasonable range check
Rate Of Change - value for rate-of-change, unit per hour (ROC)
Alert Limit and ROC - values set for alert limit and rate-of-change
Alarm Limit and ROC - values set for alarm limit and rate-of-change



Limits for Selected Item section is below the table. Here the user can edit existing limits and create new ones. The user must have the above *Location Limits* clicked on for the **List:** or it won't show location information below. Highlighting an entry in the table will result in the **Limits for Selected Item** section to be filled in with values. The user may then edit the existing information. If a user wants to add a new location to the list, he/she first needs to click on the **New** button at the bottom of the window. This action will clear all the boxes in the **Limits for Selected Item** section, allowing the user to enter the new information.

In setting up a new site the user needs to type in the blank box **Location:** the location id. Then the user needs to choose a duration code. To do this, click on the box next to **Duration:** and highlight the desired code. Next, the user can type in the month and day for the **Start MM/DD:** and **End MM/DD:** time period. This helps if the user wants data quality control and/or alert/alarm during a certain time period and not the whole year. The user can do a whole year by defaulting to **Start MM/DD:** 01/01 and **End MM/DD:** 12/31. The **Physical Element:** list allows the user to highlight the PE that will be monitored under QC and alert/alarm limits.

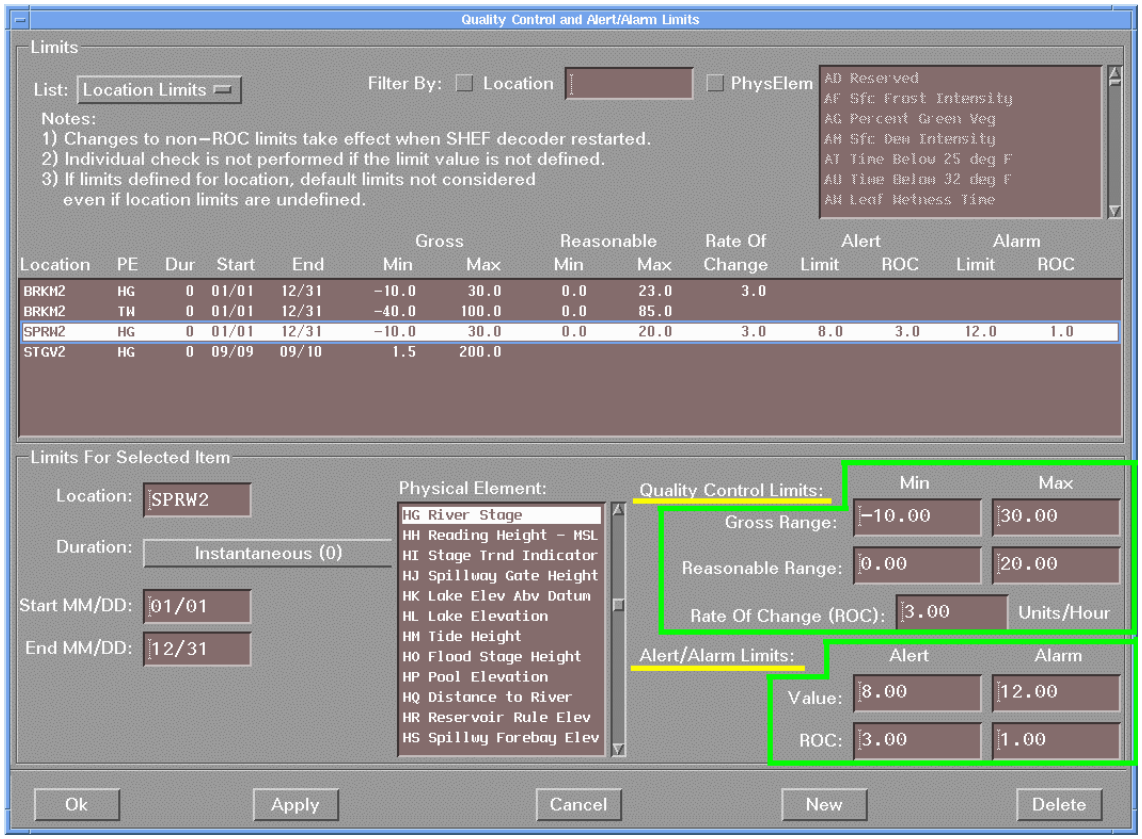


Within the **Quality Control Limits** the user has the following to work with in setting limits. The *Gross Range* is used for quality control. It rejects data outside the minimum and maximum values the user sets. Data rejected by the *Gross Range Check* is not available for use in the other applications. This range mostly rejects outliers and flagged data.

The *Reasonable Range* fine tunes the data quality. The data between the minimum and maximum will represent the physical element's expected values. Data which falls outside the *Reasonable Range*, but within the *Gross Range* will be flagged as questionable, and will still be used by other applications.

The *Rate-of-Change* (ROC) has a value set by the user that is units per hour. The ROC does not identify type source. This means the user can not set a ROC limit for DCP data and not for phone data at the same site. The ROC limit is set for all data that comes in for that one site. ROC is an absolute value, that is, it represents data either rising or falling. Data which exceeds the ROC quality control limit is flagged as questionable and is available for use in other applications.

In the **Alert/Alarm Limits** the user can type in the *Value:* boxes the values for alerts and alarms. The *ROC:* boxes are for the rate of change (units per hour) of the alert and the alarm. If alert/alarm criteria are exceeded the system can be setup such that a product is written to the AWIPS text database. The text database can be setup to alarm a recipient of that product. (See details in the run_report_alarm)



Last, is a row of buttons at the bottom of the window. They are:

OK - which accepts changes and then exits the window
Apply - accepts changes and remains in the window to continue to be used
Cancel - cancel (does not save) changes and exits the window
New - allows the user to create a new site with (quality control and alert/alarm) limits and can add new rows of other PEs to an already existing site
Delete - deletes a highlighted row in table